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CONFIDENTIAL

January 25, 2002

Wallace Reid
US Environmental Protection Agency, Region 10
1200 Sixth Ave, M/S ECL-115
Seattle, WA 98101

Re: Transmittal of Preliminary Analytical Concentration Goals
Portland Harbor Superfund Site
USEPA Docket No: CERCLA-10-2001-0240

Dear Mr. Reid:

As required by the AOC, the Lower Willamette Group is submitting the attached table of preliminary analytical concentration goals. The objective of developing analytical concentration goals is to insure that the quantification requirements of the project are met. The LWG considers the attached table of chemicals, analytical methods, and concentration goals to be a preliminary list that will be finalized in the project Work Plan. The table includes chemicals listed as chemicals of interest (COI) in the Portland Harbor Sediment Management Plan (PHSMP). Because the LWG consultants have not yet completed the project database, we have not yet had the opportunity to evaluate this significantly larger database to identify chemicals of interest using a process not unlike that used in the PHSMP. We anticipate revisions to COI list following this evaluation.

Preliminary analytical concentration goals associated with each chemical are provided in the table. These goals generally reflect the practical quantification limits for these chemicals in either sediments or tissues using analytical methods readily available from regional commercial laboratories. Although complex matrices in certain samples may confound some analyses, the referenced methods should generally allow the goals to be attained. Close laboratory oversight will be a key mechanism that we will use to identify such difficult samples and make adjustments to the analytical process to attain the lowest detection limits that can be attained.

During the development of the RI/RA/FS work plan, the tabulated analytical goals will be compared to sediment and tissue contaminant concentrations that may need to be attained for protection of human heath and the environment. As warranted based on this evaluation, the analytical methods and goals may be revised for specific chemicals of interest.

If you have any questions related to the attached table, please give me a call at (206) 241-5185.

Sincerely,

for

Betsy D. Striplin
RI/FS Coordinator

cc: Chip Humphrey, EPA
Eric Blischke, ODEQ
Rick Kepler, ODF&W
Helen Hillman, NOAA
Preston Sleeger, DOI
Brad Nye, Confederated Tribes of the Warm Springs Reservation of Oregon
Lynn Hatcher, Confederated Tribes and Bands of the Yakama Nation
Kathleen Feehan, Confederated Tribes of the Grand Ronde Community of Oregon
Tom Downey, Confederated Tribes of the Siletz Indians
Audie Huber, Confederated Tribes of the Umatilla Indian Reservation
Rick Eichstaedt, Nez Perce Tribe
Trey Harbert, LWG
Robert Wyatt, LWG

Chemicals of Interest, Method References, and Preliminary Analytical Concentration Goals for Sediments and Tissues in Portland Harbor.

Analyte	Reference Method	Method Capability	Preliminary Analytical Goals	
			Sediment[3] (dry weight)	Tissue (wet weight)
Conventionals				
Grain size analysis	PSEP		NA	
	(mod ASTM with hydrometer)	0 01%		
Atterberg limits	ASTM D-4318	1%	NA	
Specific gravity[1]	ASTM D-854		NA	
Gravimetric water content / Total solids	ASTM D-2216	< 1%	NA	
Total volatile solids	SM, M 2540E	< 1%	NA	
Total organic carbon	PSEP (combustion/IR)/Michelson, 1992	0.10%	NA	
Ammonia	MCAWW, M. 350.3/Plumb 1981	50 ppm	NA	
pH	SW 846, M. 9040/9045		NA	
Sulfide	PSEP (SM, M. 4500E)	1 mg/kg, dry	NA	
% Lipids (tissues)	PSEP			
Metals		units mg/kg, dry weight	units mg/kg, dry weight	units. mg/kg, wet weight
Antimony	CLP (ILM03 0 / ICP)	12	24	
Arsenic	CLP (ILM03.0 / ICP or GFAA)	2	4	
Cadmium	CLP (ILM03.0 / ICP or GFAA)	0.1-0 5	0.5	
Chromium	CLP (ILM03.0 / ICP)	2	4	
Copper	CLP (ILM03.0 / ICP)	5	10	
Lead	CLP (ILM03.0 / ICP)	8	16	
Mercury	CLP (ILM03.0 / CVAA)	0.1	0.2	0.4
Nickel[2]	CLP (ILM03.0 / ICP)	8	16	
Zinc	CLP (ILM03.0 / ICP)	4	8	
Organics (semivolatiles)		units: µg/kg, dry weight	units. µg/kg, dry weight	units µg/kg, wet weight
Naphthalene	CLP, PSEP mod. (M 3550 / 8270)	13	26	
Acenaphthylene	CLP, PSEP mod. (M. 3550 / 8270)	13	26	
Acenaphthene	CLP, PSEP mod. (M. 3550 / 8270)	14	28	
Fluorene	CLP, PSEP mod. (M 3550 / 8270)	12	24	
Phenanthrene	CLP, PSEP mod. (M. 3550 / 8270)	10	20	
Anthracene	CLP, PSEP mod. (M. 3550 / 8270)	11	22	
2-Methylnaphthalene	CLP, PSEP mod. (M. 3550 / 8270)	13	26	
Fluoranthene	CLP, PSEP mod. (M. 3550 / 8270)	10	20	
Pyrene	CLP, PSEP mod. (M. 3550 / 8270)	10	20	
Benzo(a)anthracene	CLP, PSEP mod. (M. 3550 / 8270)	11	22	
Chrysene	CLP, PSEP mod. (M. 3550 / 8270)	10	20	
Benzo(b+k)fluoranthenes	CLP, PSEP mod (M. 3550 / 8270)	10	20	
Benzo(a)pyrene	CLP, PSEP mod. (M 3550 / 8270)	11	22	
Indeno(1,2,3-c,d)pyrene	CLP, PSEP mod. (M. 3550 / 8270)	13	26	
Dibenzo(a,h)anthracene	CLP, PSEP mod. (M 3550 / 8270)	13	26	
Benzo(g,h,i)perylene	CLP, PSEP mod. (M. 3550 / 8270)	12	24	
Dimethylphthalate[2]	CLP, PSEP mod. (M. 3550 / 8270)	14	28	
Di-n-butylphthalate	CLP, PSEP mod. (M. 3550 / 8270)	12	24	
Butylbenzylphthalate	CLP, PSEP mod. (M. 3550 / 8270)	13	26	
Di-n-octylphthalate[2]	CLP, PSEP mod. (M 3550 / 8270)	14	28	

Chemicals of Interest, Method References, and Preliminary Analytical Concentration Goals for Sediments and Tissues in Portland Harbor, continued.

Analyte	Reference Method	Method Capability	Preliminary Analytical Goals	
			Sediment[3] (dry weight)	Tissue (wet weight)
bis(2-ethylhexyl)phthalate	CLP, PSEP mod. (M. 3550 / 8270)	10	20	40
Dibenzofuran	CLP, PSEP mod. (M. 3550 / 8270)	13	26	
Carbazole	CLP, PSEP mod (M 3550 / 8270)	10	20	
4-Methylphenol	CLP, PSEP mod (M. 3550 / 8270)	14	28	
Pentachlorophenol[2]	CLP, PSEP mod. (M. 3550 / 8270)	69	138	
Benzoic Acid[2]	CLP, PSEP mod. (M. 3550 / 8270)	130	260	
Pesticides/PCBs				
p, p'-DDE	CLP, PSEP mod. (M. 3550 / 8081)	2	7	14
p, p'-DDD	CLP, PSEP mod. (M. 3550 / 8081)	2	7	14
p, p'-DDT	CLP, PSEP mod. (M. 3550 / 8081)	2	7	14
DDTs, total			7	14
Aldrin[2]	CLP, PSEP mod. (M. 3550 / 8081)	2	10	
Dieldrin[2]	CLP, PSEP mod. (M. 3550 / 8081)	2	10	
alpha-BHC[2]	CLP, PSEP mod. (M 3550 / 8081)	2	10	20
PCB's, total [summation of Aroclors 1016, 1221, 1242, 1248, 1254, 1260]	CLP, PSEP mod. (M 3550 / 8082)	20-40	80	80
Chlorophenoxyherbicides				
2,4-D[2]	M 8151A	20	40	
Butyltins				
Tributyltin – bulk sediment	M. 3510/8270, Krone 1989 (GC/MS-SIM)	20-25	30	60
Tributyltin – porewater	As above, plus regional guidance	0 05 (ug/l)	0.1 (ug/l)	
Organics (volatiles)				
Chlorobenzene[2]	CLP (P & T, GC/MS, [M 8260])	5	10	
Xylene[2]	CLP (P & T, GC/MS, [M. 8260])	5	10	
Dioxins/Furans		units: ng/kg, dry weight	units: ng/kg, dry weight	units: ng/kg, wet weight
PCDDs/PCDFs[2]	M 1613	0.1-0.5	1.0	2 0

[1] Conducted only on a subset of samples

[2] Not a harbor-wide contaminant of concern, but it may be analyzed on a site-specific basis

[3] Assumes a sediment water content of 30-50%

Reference Method is the analytical method to be used to achieve the analytical goals. The methods cited have been documented to routinely achieve the minimum quantitation levels found under Method Capability for low to moderately contaminated sediment samples. Some sediment samples, primarily from highly contaminated environments, may not allow the determination of some analytes at these levels due to chemical interferences.

Parameters requiring summation of individual constituents will be calculated by summing concentrations above detection limits. Nondetects will not normally be included with detected concentrations If all individual analytes are reported as nondetects, then the highest nondetected value will be reported as the summation nondetected value. However, if one of the constituents is nondetected at a level which is greater than the sum of the detected constituents, this nondetected value may be used.

SM = Standard Methods for the Examination of Water and Wastewater

CLP = U.S. EPA Contract Laboratory Program

PSEP = Puget Sound Estuary Program guidance (PSEP 1986, 1997a,b)

ASTM = American Society of Testing and Materials

REFERENCES

C.A. Krone, et. al "A Method for Analysis of Butyltin Species and Measurement of Butyltins in Sediment and English Sole Livers from Puget Sound", in *Marine Environmental Research* **27**, p. 1-18; 1989. In order to achieve required detection/quantitation limits, GC/MS utilizing selected ion monitoring (GC/MS-SIM), rather than full scan acquisition is necessary.

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Puget Sound Estuary Program (PSEP). 1986. Recommended Guidelines for Measuring Conventional Sediment Variables in Puget Sound Prepared for EPA, Region 10, Seattle, Washington. Tetra Tech, Inc , Bellevue, WA.

Puget Sound Estuary Program (PSEP). 1997a. Recommended Guidelines for Measuring Metals in Puget Sound Water, Sediment, and Tissue Samples U S Environmental Protection Agency, Region 10, Seattle, WA and Puget Sound Water Quality Action Team, Olympia, WA.

Puget Sound Estuary Program (PSEP). 1997b. Recommended Guidelines for Measuring Organic Compounds in Puget Sound Sediment and Tissue Samples U.S. Environmental Protection Agency, Region 10, Seattle, WA.